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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,453	03/04/2004	Samuel Gregory Clifford	136862-1	2452
23413	7590	09/12/2005		
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			EXAMINER EDGAR, RICHARD A	
			ART UNIT 3745	PAPER NUMBER

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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## Office Action Summary

Application No.

10/708,453

Applicant(s)

CLIFFORD ET AL.

Examiner

Richard Edgar

Art Unit

3745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### *Drawings*

The drawings are objected to because the sectional views (Figs. 2-4) do not use hatching. See 37 C.F.R. §1.84(h)(3).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "1.44". See Fig. 2.

The drawings are objected to because the use of four arrows not associated with reference numerals in Fig. 4 is not clear. See 37 C.F.R. §1.84(r).

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "62" and "144" have both been used to designate bristles. See Fig. 4 and paragraphs [0028] and [0031].

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being

Art Unit: 3745

amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 8 and 21 are objected to because of the following informalities:

Claim 8 appears to have a word processor error therein based on the non-idiomatic English used. It appears that the claim should have been presented as seen below, similar to claim 18.

8. The method of claim 1 wherein the step of providing said brush seal ~~comprises providing said disposing a brush seal~~ into a packing ring includes disposing said brush seal into an industry standard packing ring.

Claim 21 should be amended as follows, since both ends defining the double flow steam turbine has previously been recited.

21. A method for reducing self sealing flow in a combined cycle double flow steam turbine, the method comprising: sealing both ends defining the double flow steam turbine with a brush seal in a packing ring of a packing ring assembly ~~at either end defining the double flow steam turbine.~~

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent Application Publication No. 2002/0190474 (Turnquist et al. hereinafter) in view of Applicants' admitted prior art.

Turnquist et al. teach a brush seal 34 provided in a packing ring of a packing ring assembly 26/28/30. The brush seal has flexible bristles 40 which allow the seal to bend about an axis within a significant range of diameters (see paragraph [0018]). The brush seal is in contact with the surface of the rotor 14 (see paragraph [0015]). The bristles

Art Unit: 3745

are metal (see paragraph [0015]). The brush seal and bristles are bend about a significant range of diameters (see paragraph [0018]) to seal against the rotor. The seal contacts the rotor (see paragraph [0015]) and therefore does not have a clearance. The brush seal is disposed in a standard packing ring (see paragraph [0019]).

Turnquist et al. teach the incorporation of brush seals with labyrinth seals for rotor end seals (paragraph [0002]), but do not specifically recite that the rotor end seals are for a double flow steam turbine.

Applicants have admitted as prior art the use of labyrinth seals (Figs. 2 and 3) on the double flow steam turbine of Fig. 1, wherein vent and seal seals 20, 22 are used on each end of the low pressure turbine 14 for the purpose of minimizing leakage of steam from the low pressure turbine.

Since Turnquist et al. teach the replacement of labyrinth rotor end seals with brush seals inserted into packing rings, and Applicants have admitted that labyrinth seals used in low pressure double flow steam turbines is prior art, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use the Turnquist et al. packing ring brush seals in the low pressure double flow steam turbine disclosed by Applicants for the purpose of minimizing leakage of steam from the low pressure turbine.

#### ***Contact Information***

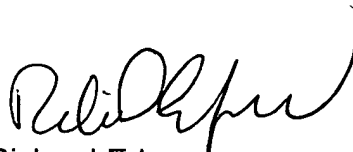
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Edgar whose telephone number is (571) 272-

Art Unit: 3745

4816. The examiner can normally be reached on Mon.-Thur. and alternate Fri., 7 am- 5 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on (571) 272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Richard Edgar  
Examiner  
Art Unit 3745

RE